**Informatics, Ch 4, Data Analytics: Presenting the findings**

**Manipulating data** pg 199-223

1. With your chosen MMOS be aware of the requirements of the functions you need to be able to undertake.
2. What is the role of Heading styles and CSS sheets?

* In webpages they allow authors to describe formatting styles once, use the style many times and change styles easily. Heading styles also let you automatically create a table of contents or an index with little effort.

**Formats and Conventions, p 202**

1. Define the terms format and convention and use an example to distinguish between them.

* **Format**- is the form in which information is presented, such as a webpage, pie chart, text in a paragraph, table, comic strip, limericks, pop song or newspaper article.
* **Conventions**- Are the accepted techniques that an audience will expect to find when a format is used. Each format has its own conventions. E.g. a convention for a webpage would be underlining or using coloured links for URLs.

1. Distinguish between:
   1. Mandatory

* Mandatory conventions are rules that we must follow or we are breaking the law.
  1. preferred and
* Are those where most people have a distinct preference about how something should be done.
  1. optional conventions.
* Offer you a real choice.

1. Choose four conventions that you think will be important when you design your MMOS.

* Underlining links for where I acquired my evidence from
* A logo to use as a homepage button or just a return to home button
* Having one main topic per page
* Landing page is named index.html/htm/php.

1. Why is it important to follow these conventions?

* Because information will be far quicker and easier to find to find and understand for the user if it is presented in a predictable manner by following these conventions.

**Design principles,** **p 204**

**Functionality: Useability**

1. Briefly describe the principles of:
   1. Robustness; what are the countermeasures for robustness?

* Robustness refers to the solution’s ability to cope with errors during use. The solution should resist crashes, failure, and security threats, and function correctly in spite of invalid data or a stressful environment. Robustness countermeasures include comprehensive data validation, preventing errors, and anticipating troublesome user actions.
  1. Flexibility; how do you build a MMOS to cater for flexibility?
* Refers to the solution’s ability to cope with multiple ways of performing tasks. One example would be to build your website without fixed-width dimensions, and instead let the user determine the page size.
  1. Ease of use
* Refers to how user friendly the solution is. To do this you should ask yourself questions when creating, planning and testing the solution e.g. Can basic tasks be performed quickly? Or Is it easy for users to intuit the design of your MMOS and perform basic tasks?

**Functionality: Accessibility**

1. For each of the following principles briefly describe there characteristics.
   1. Navigation

* Refers to the clarity, simplicity and intuitiveness of the solution’s navigation system. You should ensure the MMOS can be navigated comfortably by multiple browsers and a touchscreen.
  1. Error tolerance
* Refers to the solution’s ability to help users avoid and correct mistakes using clear instructions, and its ability to prevent them from making errors in the first place by avoiding allowing them to perform actions that could lead to errors.

**Functionality: Appearance:**

1. For each of the appearance principles briefly indicate there nature:
   1. Alignment

* The human eye can detect when an object is only a single pixel out of place vertically or horizontally compared to its neighbours. Text, images and columns should all be aligned precisely. Sloppy alignment looks careless and unprofessional, and ruins the impression that items are visually related to each other.
  1. Repetition of design elements
* Your audience will be reassured by repetition in your solution. This is not repetition of content and words – rather, of design elements. Using the same logos, icons, typefaces, heading styles, colour scheme, margins, borders, menu positions and shortcut keys throughout your solution will help your audience to trust the predictability and consistency of your solution. This ties into formats and conventions.
  1. Contrast
* Refers to the visual difference in colour or tone between objects (both text and images). Greater contrast will make objects appear to stand out more and make it easy for the user to see and follow.
  1. Space
* Refers to the areas around and between objects – text and images (still and moving). If your solution is cluttered it may be unpleasant to browse. And while you do need to include all of the information obtained for your Outcome on your MMOS, you still need to space your objects so they can be individually distinguished and navigated through correctly.
  1. Balance
* Balance refers to creating a balanced design that’s visually appealing for the viewer. All elements of a layout have a visual weight, and if the elements of either side or the top and bottom of the screen are of an equal weight, visual balance is achieved.

**Generating design ideas,** p 209

1. What is a design idea? Make a list of ideas you have for your MMOS.

* A design idea is a brief, rough, ‘back of the envelope’ outline of a strategy for solving a problem.
* Created by Wix with multiple pages
* Created by Weebly/Squarespace

1. List out some creative design techniques.

* Brainstorming
* Consult end users
* Mind mapping
* Graphic organisers

1. Describe some tips for creative thinking, p 215

* Substitute- Parts of the problem with something else
* Combine- Unconnected things together.
* Adapt- Use an existing component in a different way, such as using mind mapping software to create a site map for a website.
* Strip- By reducing the problem right back to its most basic parts and see what is left.
* Compare- It to another similar problem.
* Sleep on it
* Research- About the issue
* Visualisation- By making it visible it might be easier to understand or have a ‘light bulb’ moment.
* Be observant and prepared- Keep your eyes open and observant to similar things around you, many great inventions have come by from people just being observant.
* Take risks, persist and be brave.

**Evaluating design ideas,** p 218

1. Why is it important to evaluate your design ideas before progressing with your project?

* Because rarely will your first design idea be your best one. So by evaluating each one before you move on to the next stage (development) you can gain a rough idea around its effectiveness, efficiency and also its constraints and decide upon the best one.

1. What are some criteria that could be used to help choose the best design idea?

* The ease of use
* How long it will take to implement
* Scalability
* Its scope for future modification and enhancement
* The degree to which it satisfies all requirements
* The degree to which it copes with constraints

**Design tools,** p 220

1. Briefly describe the purpose of each of the following:
   1. IPO charts

* They help to design algorithms in spreadsheets, databases and programs, which can be used to devise formulas, scripts and program code.
  1. Mock ups or annotated diagrams
* Mock ups or annotated diagrams show the intended appearance of printed output, onscreen information and interfaces.
  1. Site map
* A site map is a hierarchical diagram that shows the pages and links of a website, screens of a slideshow, or forms in a program. Use it to summarise your MMOS’s structure, ensure all relevant topics are included, and give your audience an overview of the scope of the site.
  1. Storyboard
* A website’s storyboard focuses on site navigation. Like a site map. It shows all pages in a site, but also adds information about how objects within those pages are used as navigational links.
  1. Organisational and hierarchy charts
* These charts map out the relative positions of items, or people, in a hierarchy. An organisational chart particularly indicates who has authority, and who reports to whom.
  1. Layout diagrams
* Layout diagrams shows the components and their relationships in a system.